In the Claims

Claim 1 (Currently amended):

A plastid transformation vector suitable for transforming a non-green plant cell, said plastid vector comprising, as operably linked components, a first flanking sequence, a DNA sequence coding for a foreign gene, and a second flanking sequence, wherein said flanking sequences are from the same species as said plant cell.

Claim 2 (Currently amended):

The vector of claim 1, further comprising a 5` regulatory sequence functional in proplastids and chloroplasts in light and in dark~~said plastid transformation vector~~.

Claim 3 (Currently amended):

The vector of claim 2, wherein said regulatory sequence comprises a promoter and said promoter is operative in proplastids and chloroplasts in light and in dark~~said plastid genome~~.

Claim 4 (Original):

The vector of claim 3, wherein said promoter is Prrn 16S rRNA.

Claim 5 (Original):

The vector of claim 4, wherein said regulatory sequence comprises psbA 5' and psbA 3' elements.

Claim 6 (Original):

The vector of claim 2, wherein said regulatory sequences further comprise a 5' UTR capable of providing transcription and translation enhancement of said DNA sequence coding for a foreign gene.

Claim 7 (Original):

The vector of claim 2, wherein said regulatory sequences further comprise a 3' untranslated region (UTR) capable of conferring transcript stability to said DNA sequence coding for a foreign gene.

Claim 8 (Original):

The vector of claim 2, wherein said regulatory sequence further comprise a gene 10 5'UTR.

Claim 9 (Original):

The vector of claim 8, wherein said regulatory sequence further comprises a gene 10 5'UTR/rps 16 3'UTR.

Claim 10 (canceled).

Claim 11 (Original):

The vector of claim 1, wherein said first flanking sequence is about 4 kb.

Claim 12 (Original):

The vector of claim 1, wherein said second flanking sequence is about 4 kb.

Claims 13-14 (canceled).

Claim 15 (Original):

The vector of claim 6, wherein said 5' UTR is a 5' UTR of psbA.

Claim 16 (Original):

The vector of claim 7, wherein said 3' UTR is a 3' UTR of psbA.

Claim 17 (Original):

The vector of claim 1 further comprising a DNA sequence encoding a selectable marker.

Claim 18 (Original):

The vector of claim 17, wherein said selectable marker is an antibiotic-free selectable marker.

Claim 19 (Original):

The vector of claim 18, wherein said antibiotic-free selectable marker is Betaine aldehyde dehydrogenase (BADH).

Claim 20 (Original):

The vector of claim 17, wherein said DNA sequence encoding said selectable marker encodes an antibiotic resistance selectable marker.

Claim 21 (Original):

The vector of claim 20, wherein said antibiotic resistance selectable marker is aadA.

Claim 22 (Original):

A plant stably transformed with the vector of claim 1.

Claim 23 (Currently amended):

The vector of claim 20, wherein said antibiotic resistance selectable marker is an aminoglycodase. ~~A progeny of the plant of claim 22.~~

Claim 24 (canceled).

Claim 25 (Currently amended):

The vector of claim 23, wherein said antibiotic is kanamycin~~A non-green part of the plant of claim 22, comprising a plastid genome having a heterologous DNA sequence coding for polypeptide of interest~~.

Claim 26 (Currently amended):

A ~~The~~ plant ~~of claim 22, wherein said plant further~~ that comprises at least one pro-plastid transformed with the vector of claim 1.

Claim 27 (Original):

A somatic embryo transformed with the vector of claim 1.

Claims 28-29 (canceled).

Claim 30 (Original):

A transgenic non-green plant cell having a plastid genome transformed with the plastid transformation vector of claim 1, wherein said transgenic non-green plant cell is regenerated through somatic embryogenesis.

Claim 31 (Original):

A method of transforming a plastid through somatic embryogenesis comprising the steps of: integrating the vector of claim 1 into a plastid genome of a plant plastid.

Claim 32 (Currently amended):

A method of achieving plastid transformation using non-green ~~no green~~ explants, wherein a plant is regenerated through somatic embryogenesis comprising the steps of:

a) creating a transplastomic plant cell by transforming a plant plastid in a plant cell with a vector of claim 1, said plant cell being capable of being regenerated through somatic embryogenesis, said selectable marker gene proteins providing resistance of the plant cell to a selection agent;

b) culturing the transplastomic plant cell in presence of the selection agent under conditions that allow the transplastomic cell to form a somatic embryo; and

c) growing the somatic embryo into a transplastomic plant.

Claim 33 (Original):

A plant cell comprising a plastid including an expression cassette comprising, as operably joined components, a heterologous DNA sequence encoding a polypeptide of interest, a DNA sequence encoding a selectable marker, and plastid DNA sequences flanking the expression cassette to facilitate stable integration of the said expression cassette into the chloroplast genome by homologous recombination, wherein said plant cell is regenerated through somatic embryogenesis.

Claim 34 (canceled).

Claim 35 (Currently amended):

A plastid transformation vector capable for transforming non-green plant cells, said plastid vector comprising, as operably linked components, a first flanking sequence, promoter operative in a plastid, a DNA sequence coding for a selectable marker operative in said plastid, a DNA sequence coding for a foreign gene, and a second flanking sequence, wherein said flanking sequences are from the same species as said plant cells.

Claim 36 (Currently amended):

A plastid transformation vector suitable for transforming a plastid, wherein said plastid to be transformed is in a non-green plant cell, and wherein said plastid transformation vector comprises, as operably linked components, a first flanking sequence, a regulatory sequence functional in said plastid, a heterologous DNA sequence coding for a polypeptide of interest, and a second flanking sequence, wherein said flanking sequences are from the same species as said plant cell.

Claim 37 (Original):

A method for producing a polypeptide of interest in a non-green plant cell, wherein said polypeptide of interest is coded for by a heterologous DNA sequence, comprising the steps of: integrating a plastid transformation vector according to claim 1 into the plastid genome of a plant cell; and growing said plant cell to express said polypeptide of interest.

Claim 38 (Current amended):

A method of visually selecting a transgenic plant comprising the steps of: transforming a non-green plant cell via the vector of claim 1 to express an exogenous betaine ~~betain~~ aldhyde dehydrogenase (badh) gene.

Claim 39 (Original):

A plastid transformation vector suitable for transforming a non-green plant cell, said plastid vector comprising, as operably linked components, a first flanking sequence, a regulatory sequence functional in a plastid, DNA sequence coding for a foreign gene, and a second flanking sequence.

Claim 40 (New):

A method of transforming a plant plastid and regenerating a transplastomic plant by somatic embryogenesis, said method comprising:

a) creating a transplastomic plant cell by transforming a plant plastid in a plant cell with a vector of claim 1, said plant cell being capable of being regenerated through somatic embryogenesis, said selectable marker gene proteins providing resistance of the plant cell to a selection agent;

b) culturing the transplastomic plant cell in presence of the selection agent under conditions that allow the transplastomic cell to form a somatic embryo; and

c) growing the somatic embryo into a transplastomic plant.

Claim 41 (New):

A somatic embryo produced by the method of claim 40.

Claim 42 (New):

The method of claim 40 wherein the plant is selected from a cereal crop, a legume, and oil crop, a cash crop, a vegetable, a fruit, a nut, and a tree.